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[Continued on next page]

(54) Title: THIN DIELECTRIC FORMATION BY STEAM OXIDATION

Present Invention

(57) **Abstract:** The present invention relates to the steam oxidation of silicon wafers to form thin gate and capacitor dielectrics with improved electrical properties. In the present invention, improved oxide properties are obtained in a single wafer Rapid Thermal Process ("RTP") by beginning steam oxidation without stabilizing the silicon wafer in dry oxygen.

Wafer loaded into chamber



Wafer ramped to temperature in steam and SiO₂ layer grown in steam



Wafer cooled and removed from reactor



European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22059

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 21/302, 21/461, 21/31
US CL : 438 /770, 771, 773

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 438 /770, 771, 773

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,037,273 A (GRONET et al) 14 March 2000 (14.03.2000), abstract last two lines; column 5 line 60 - column 6 line 5; column 7, line 2.	1-10

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
*	Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Steven Rao Telephone No. (571) 272-2800 

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INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:
EAST; WEST
search terms: interfacial near oxide near layer